INDUSTRIAS TECHNOFLEX SA

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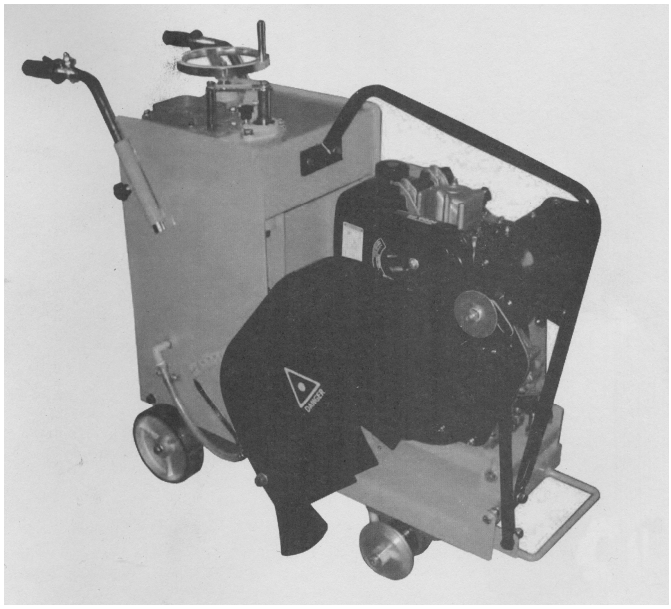
Cortadora de Asfalto CA-500

Concrete Cutter **CA-500**



Manual de Instrucciones / Lista de Recambios

Instruction Manual / Spare Parts

MAQUINARIA PARA LA CONSTRUCCIÓN Y OBRAS PÚBLICAS

BUILDING AND PUBLIC WORKS MACHINERY

Este manual contiene información y procedimientos que son necesarios para utilizar y mantener esta máquina. Para su propia seguridad y protección, por favor lea cuidadosamente, entienda y observe todas las instrucciones de seguridad descritas en este manual. LOS DATOS CONTENIDOS EN ESTE MANUAL SON CORRECTOS EN EL MOMENTO DE SU EDICIÓN. NO OBSTANTE EL FABRICANTE SE RESERVA EL DERECHO DE MODIFICAR LAS CARACTERÍSTICAS, SIN PREVIO AVISO A FAVOR DEL COMPROMISO DE MEJORA CONTINUA.

This manual provides information and procedures to safely operate and maintain this machine. For your own safety and protection from injury, carefully read, understand and observe the safety instructions described in this manual. THE INFORMATION CONTAINED IN THIS MANUAL ARE CORRECT FROM THE MOMENT OF EDITING. HOWEVER THE MANUFACTURER RESERVES THE RIGHT TO MODIFY THE CHARACTERISTICS, WITHOUT PRIOR NOTICE IN CONSIDERATION OF CONTRACT COMMITMENT OF CONTINUOUS IMPROVEMENT.

Mantenga este manual ó una copia de él con la máquina. Si se pierde ó Ud. desea un ejemplar adicional haga el favor de comunicarse con INDUSTRIAS TECHNOFLEX S.A. Esta máquina fue fabricada con la seguridad del usuario en mente; sin embargo, situaciones peligrosas pueden presentarse si la máquina es utilizada inapropiadamente. Siga las instrucciones de utilización cuidadosamente. Si Ud. tiene preguntas ó dudas acerca de la utilización o mantenimiento de este equipo, haga el favor de comunicarse con INDUSTRIAS TECHNOFLEX S.A.

Keep this manual or a copy of it with the machine. If you lose this manual or need an additional copy, please contact INDUSTRIAS TECHNOFLEX S.A. This machine is built with user safety in mind, however, it can present hazards if improperly operated and serviced. Follow operating instructions carefully! If you have questions about operating or servicing this equipment, please contact INDUSTRIAS TECHNOFLEX S.A.

1.1 Medidas de Seguridad

Este manual contiene PRECAUCIONES y ADVERTENCIAS que deben ser seguidas para evitar la posibilidad de un mantenimiento inapropiado, daños a la máquina ó lesiones personales. Lea y siga todas las PRECAUCIONES y ADVERTENCIAS, incluidas en este manual de instrucciones.

ATENCIÓN

Si no se siguen correctamente las instrucciones podrían ocurrir graves lesiones personales.

1.2 Advertencias e Instrucciones de Seguridad

LEA TODAS LAS INSTRUCCIONES

ATENCIÓN

Para poder utilizar este equipo con seguridad es necesario que el usuario este debidamente cualificado y familiarizado con el. Los equipos que no sean utilizados apropiadamente o por personas sin preparación puede ser peligroso. Haga el favor de leer todas las instrucciones de manipulación y seguridad que siguen. Familiaricese con el uso apropiado de este equipo antes de manipularlo.

Especificaciones acústicas

Las especificaciones acústicas requeridas, por la EC-Regulación de Máquinas en el apéndice1, parágrafo 1.7.4 f, son:

Nivel de presión acústica en el lugar del operario: L_{PA} = 92dB(A)

Nivel de potencia acústica L_{WA} = 105 dB(A)

Los niveles de sonido son determinados por la norma ISO 3744 referente a la potencia de sonido (L_{WA}) y, alternativamente, la norma ISO 6081 referente a la presión acústica (L_{PA}) en el lugar de trabajo.

El valor de la aceleración efectiva ,determinados por la norma ISO 8662, Parte 1, es de 3,5 m/s^2.

1. *NUNCA utilice esta máquina para otra aplicación que no sea cortar asfalto.*

2. *NUNCA permita que una persona sin suficiente preparación utilice la máquina. Las personas que trabajen con la máquina deben estar familiriazadas con los riesgos y peligros de la máquina misma.*

3. *NUNCA toque el motor o el silenciador mientras trabaje la máquina o inmediatamente después de haber apagado la máquina. Estos elementos pueden estar calientes y provocar quemaduras.*

4. *NO utilice accesorios que no sean recomendados por* ***INDUSTRIAS TECHNOFLEX S.A.*** *para este equipo. Puede causar daños en el equipo o provocar lesiones al operario.*

5. *NO trabaje con la máquina sin la protección de la correa. La ausencia de este elemento de protección puede provocar lesiones y daños serios.*

6. *NUNCA deje la máquina funcionando sin un operario que la custodie.*

7. *¡Permanezca atento! Ponga atención a lo que está haciendo. Use sentido común cuando trabaje con el equipo. NUNCA lo use cuando se sienta cansado o bajo los efectos de las drogas, alcohol o medicamentos.*

8. *NO use ropa suelta, joyas o pelo largo. Mantenga los cabellos largos, ropa y guantes lejos de las partes en movimiento.*

9. *NUNCA utilice el equipo en zonas cerradas sin una ventilación adecuada. el gas de escape del motor contiene el gas venenoso del monóxido de carbono; la exposición al monóxido de carbono puede causar la pérdida de sentido y puede conducir a la muerte.*

10. *Mantenga SIEMPRE manos, pies, y ropa suelta lejos de las partes móviles de la máquina.*

11. *Use vestuario de seguridad cuando manipule el equipo. Las gafas de seguridad le protejerán sus ojos contra el polvo que se encuentre en el aire.*

12. *NO utilice el equipo sin haber leído, entendido y seguido los procedimientos del manual de operaciones.*

13. *NO fuerze la máquina. Úsela correctamente para lo que está diseñada.*

14. *NUNCA permita que personal sin entrenamiento opere o preste servicio al equipo.*

15. *Cuide las herramientas. Mantenga el equipo limpio para un uso mejor y más seguro.*

16. *Asegurese de que el operario está familiarizado con las medidas de seguridad antes de utilizar el equipo .*

17. *SIEMPRE mantenga la válvula de combustible cerrada, cuando el equipo no esté trabajando.*

18. *Mantenga almacenado el equipo en un lugar adecuado cuando no se esté utilizando. El equipo debe estar almacenado en un area limpia, seca y fuera del alcance de los niños.*

19. *Sustituya las piezas gastadas ó dañadas con piezas diseñadas y recomendadas por* ***INDUSTRIAS TECHNOFLEX S.A.***

20. *Cualquier servicio fuera del que cubre este manual de instrucciones, debe ser realizado por un Servicio Autorizado por* ***INDUSTRIAS TECHNOFLEX S.A.***

21. *SIEMPRE trabaje a lo largo de superficies uniformes. Evite los objetos que puedan interferir en la operación, pueden causar lesiones.*

22. *NO trabaje con la máquina fuera del lugar de trabajo, puede ser peligroso.*

¡Guarde estas instrucciones!

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I RULES FOR SAFE OPERATION

WARNING:

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating these Concrete Cutters:

GENERAL SAFETY

- **DO NOT** operate or service this equipment before reading the entire manual.
- This equipment should not be operated by persons under 18 years of age.
- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.
- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.
- **NEVER** operate this equipment under the influence or drugs or alcohol.
- **NEVER** use accessories or attachments, which are not recommended by our company for this equipment. Damage to the equipment and/or injury to user may result.
- The manufacturer does not assume responsibility for any accident due to equipment modifications.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.
- **ALWAYS** check the machine for loosened threads or bolts before starting.
- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or saw.
- **High Temperatures** – Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with **hot** components can cause serous bums.
- The engine section of this cutter requires an adequate free flow of cooling air. **NEVER** operate the cutter in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious damage to the saw or engine and may cause injury to people. Remember the cutter's engine gives off **DEADLY** carbon monoxide gas.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with flammable liquids. When refueling, stop the engine and allow it to cool. **DO NOT** smoke around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.
- **NEVER** operate the cutter in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe bodily harm or even death.
- Topping-off to the ***fuel*** filler port is dangerous, as it tends to spill fuel.

- **NEVER** use fuel as a cleaning agent.
- **ALWAYS** read, understand, and follow procedures in operator's Manual before attempting to operate equipment.
- **ALWAYS** be sure to operator is familiar with proper safety precautions and operating techniques before using the cutter.
- Stop the engine when leaving the cutter unattended.
- Block the unit when leaving or when using on a slope.
- Maintain this equipment in a safe operating condition at all times.
- **ALWAYS** stop the engine before serving, adding fuel and oil.
- **NEVER** Run engine without air filter. Severe engine damage may occur.
- **NEVER** Run engine without air filter. Severe engine damage may occur.
- **ALWAYS** service air cleaner frequently to prevent carburetor malfunction.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- **NEVER** operate this cutter in areas that contain combustible material or fumes. Fire and/or explosions may result from errant sparks from the equipment.

WARNING:

- **DO NOT** operate this equipment unless all guards and safety devices are attached and in place.
- Caution must be exercised while servicing this equipment. Rotating and moving parts can cause injury if contacted.
- Keep all inexperienced and unauthorized people away from the equipment at all times.
- Unauthorized equipment modifications will void all warranties.

DIAMOND BLADE SAFETY

- Use appropriate steel centered diamond blades manufactured for use on concrete cutters.
- **ALWAYS** *inspect diamond blades before each use.* The blade should exhibit no cracks, dings, or flaws in the steel centered core and/or rim. Center (arbor) hole must be undamaged and true.
- Examine blade flanges for damage, excessive wear and cleanliness before mounting blade. Blade should fit snugly on the shaft and against the inside/outside blade flanges.
- Ensure that the blade is marked with an operating speed greater than the blade shaft speed of the cutter.
- Only cut the material that is specified by the diamond blade. Read the specifications of the diamond blade to ensure the proper tool has been matched to the material being cut.
- ALWAYS keep blade guards in place. Exposure of the diamond blade must not exceed 180 degrees.
- Ensure that the diamond blade does not come into contact with ground or surface during transportation. **DO NOT** drop the diamond blade on ground or surface.
- The engine governor is designed to permit maximum engine speed in a no-load condition. Speeds that exceed this limit may cause the diamond blade to exceed the maximum safe allowable speed.
- Ensure that the blade is mounted for proper operating direction.

CUTTER TRANSPORTATION SAFETY

- Use the lifting bail and appropriate lifting equipment to ensure the safe movement of the cutter.
- **DO NOT** use the handle bars and/or front pointer as lifting points.
- **NEVER** tow the saw behind a vehicle.
- Ensure that both pointer bars are positioned appropriately to minimize their exposure during transportation.
- Safeguard against extreme cutter attitudes relative to level. Engines tipped to extreme angles may cause oil to gravitate into the cylinder head making the engine difficult to start.
- **NEVER** transport the cutter with the blade mounted.

EMERGENCIES

- **ALWAYS** know the location of the nearest fire extinguisher and first aid kit. Know the location of the nearest telephone. Also know the phone numbers of the nearest ambulance, doctor and fire department. This information will be invaluable in the case of an emergency.

MAINTENANCE SAFETY

- **NEVER** lubricate components or attempt service on a running machine.
- **ALWAYS** allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in running condition.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.

II OPERATION

Introduction/Determining the Right Machine

Congratulations on your purchase of our Cutter! You've made an excellent choice! Our floor cutter has been specifically designed as the ideal machine for the professional contractor who is engaged in concrete and asphalt flat sawing.

The machines used for the primary purpose of "flat" sawing. This type of sawing is described as "flat" because the pavement is cut somewhere close to a horizontal plane. It is the most common type of diamond blade cutting.

Concrete cutters in the industry are available in a variety of types, sizes and styles, they range from manual or self propelled in horsepower from 7-72hp. It is possible to cut both concrete (green or cured, with or without rebar) or asphalt with a concrete cutter. Our MF12 utilized for jobs requiring precision cutting including floors, pavements, walkways, ramps and other flat sawing applications.

You will find a cutter to fit a wide variety of job applications.

Upon receipt of your machine, **CAREFULLY CHECK FOR ANY FREIGHT DAMAGE.** Any damage should be immediately reported to the carrier and a claim registered.

Operating Principle/Delivery Checks/ Installing Blade/Types of Cutting

OPERATING PRINCIPLE

The following instructions were compiled to provide you information on how to obtain long and trouble free use of the unit. Periodic maintenance of this unit is essential. Read the manual in its entirety and follow the instructions carefully. Failure to do so may injure yourself or a bystander.

DELIVERY CHECKS

Immediately upon taking delivery of your new equipment and before putting it into service:

- Read the handbook completely—it could save a great deal of unnecessary expense.
- Read the engine manual supplied.
- Check the general condition of the equipment—has it been damaged during delivery?
- Check engine oil level.
- Check fuel levels.

Recommend lubricants are detailed in the **CARE AND MAINTENANCE** section.

INSTALLING BLADE

1. Be certain that the spark plug is disconnected or saw is unplugged.
2. Remove the blade shaft nut, and take off outside blade shaft flange.
3. Clean off any foreign particles on the clamping surfaces of flanges and on the mounting surface of the blade.
4. Place the blade on the blade shaft, lining up the offset drive pin in the blade with the drive pin in the mounting collar (if the pin system is available on the machine). If your blade has a directional rotational arrow, position arrow for down cut (diamond tail trailing for down cut).
5. Replace the outside blade shaft flange on the blade shaft. Drive pin on the inside collar must project through the drive hole in the blade and into the outside collar (if the pin system is available on the machine).
6. Tighten the blade shaft nut securely against star washer and outside flange, using wrench supplied.
7. Reconnect the spark plug or (with switch "off") plug in the electric supply cord.

TYPES OF CUTTING

Cut speed depends entirely on using the correct blade for the material to be cut. Wet or dry, diamond blades of various specifications are available for cutting concrete or asphalt.

Before Starting/Cold Start/Hot Start/ To Start Cutting

BEFORE STARTING

1. Use correct blade for cutting conditions.
2. Ensure arbors and flanges are clean and undamaged.
3. Mount blade and tighten securely using wrench.
4. When wet cutting, check water jets for adequate flow.
5. Align pointer with cutter blade.

Caution – Set unit up in an open area. Avoid close proximity to structures or other equipment. Failure to do so may cause inadvertent injury to operator or other persons in the area.

Cold start – Open the fuel valve under the gas tank all the way. Position the engine stop switch, located on the engine, to run. Open the throttle approximately half way and apply the choke. Pull the starter rope sharply. When the engine starts, open the choke and adjust the throttle as necessary to keep it running. Allow the engine to warm up for a few minutes before placing it under the load. If the engine doesn't start after (3) pulls, open choke slightly to prevent flooding. Always operate the engine at full throttle when under load.

Hot Start – Open the valve under the gas tank all the way if it has been shut off. Open the throttle approximately half way. Do not apply the choke. Pull the starter rope sharply until the engine starts. When the engine starts, adjust the throttle. Always operate the engine at full throttle when under load.

NOTE: These starting instructions are general guidelines only. Since many engine options are available, consult the Engine Manual included with this unit for specific instructions.

Caution – Gasoline Engines – To improve the engine service life, allow the engine to idle without load for (2) to (5) minutes before shutting it down. When the idling period is up, use the stop switch located on the engine and turn it to stop. Close the fuel valve under the gas tank. Engine flooding can occur if the valve is left open during transport.

TO START CUTTING

1. Start engine and let engine warm up. All cutting is done at full throttle.
2. Align blade and cutter with cut. If wet cutting, open water valve and turn water safety switch on.
3. Lower blade into cut slowly.
4. Cut as fast as blade will allow. If blade climbs out of cut, reduce forward speed or depth of cut.
5. Use only enough side pressure on cutter handles to follow cutting line.

Cutting/Belts & Pulleys

CUTTING

Lower the blade into concrete to required depth by turning the tilt crank counterclockwise. Ease the saw slowly forward. Slow forward pressure if the saw begins to stall.

Note: For deeper cuts (4 inches/102mm or more), several cuts should be made in incremental steps of 1-1/2 inch (38mm) to 2 inches (51mm) until the desired depth is reached.

Push the saw steadily forward using the front pointer as a guide. Exert enough forward pressure so that the engine/motor begins to labor, but does not slow down. If the saw begins to stall, retard forward movement until full RPM is restored to the blade. If saw stalls, raise the blade out of the cut before restarting. Avoid excessive side pressure or twisting of the blade in the cut.

BELTS & PULLEYS

NEVER MAKE ADJUSTMENTS TO V-BELTS AND PULLEYS WHILE ENGINE IS RUNNING.

1. The best tension for a v-belt drive is the lowest tension at which the belts will not slip under full load.
2. Take up tension until the belts are snug in the grooves. Run the drive for about five (5) minutes to "seat" the belts. The impose the peak load. If the belts slip, tighten them until they no longer slip at peak load. Most new belts will need additional tensioning after seating.
3. Remember, too much tension shortens belt and bearing life.
4. Check the belt tension frequently during the first day of operation. Check the belt tension periodically thereafter and make any necessary adjustments.
5. The two most common causes of sheave misalignment are:

a) The engine drive shaft and the blade shaft are not parallel.

b) The pulleys are not located properly on the shafts.

6. To check alignment, use a steel straight edge. See Figure 1.

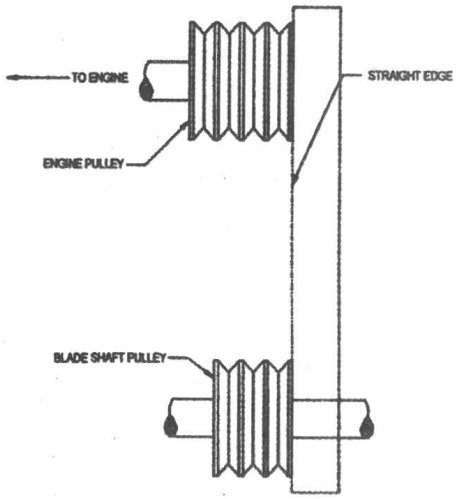


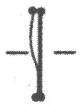
Figure 1

7. Line up the straight edge along the outside face of both pulleys shown in the drawing. All pulleys have (2) set screws in the bottom of their grooves. Set screws require thread locking lock title.
8. Misalignment will show up as a gap between the pulley face and straight edge. Make sure there is clearance between arbor pulley and saw base on both sides.

DRY CUTTING

- **Never operate any saw without safety guards in place.**
- **Do not exceed maximum operating speed established for blade diameter.**
- **Do not force blade into material: allow blade to cut at its own speed.**
- **Do not make long continuous cuts. Never dry cut for more than 30 seconds at a time. Allow blade to cool.**
- **Do not cut or grind with side of blade or cut a curve or radius. Do not cut dry with blades recommended for wet cutting.**
- **Do not operate saw with blade diameter larger than machine's capacity.**

III MAINTAINENACE - TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
UNEVEN SEGMENT WEAR	• (In wet cutting) Insufficient water (usually on one side of blade). • Equipment defects also can cause the segments to wear unevenly. • Saw head is misaligned.	• Flush water system. • Check flow to both sides of blade. • Replace bad bearings, worn arbor shaft or misalignment to spindle. • Check alignment for squareness, both vertically and horizontally, of the saw blade.
SEGMENT CRACKS	• Blade is too hard for material being cut.	• Use a blade with a softer bond/matrix.
SEGMENT LOSS	• Blade overheats because of lack of coolant (water or air). • Core is worn from undercutting. • Defective collars/flanges set blade out of alignment. • Blade is too hard for material being cut. • Blade is cutting out of round, causing a pounding motion. • Improper blade tension.	• (Wet Cutting) Check water lines. • Make sure flow is adequate on both sides of blade and there are no blockages • Use sufficient water to flush out the cut. • (Dry Cutting) Run blade free of cut periodically to air cool. • Clean collars/flanges or replace if they are under recommended diameter. • Use proper blade specification for material being cut. • Replace worn bearings; realign blade shaft or replace worn blade mounting arbor. • When ordering blades match shaft speed of saw. • Check spindle speed to ensure blade is running at correct RPM. • Avoid twisting or turning blade in the cut.
CRACKS IN CORE	• Blade flutters in cut as a result of losing blade tension. • Blade specification is too hard for the material being cut.	• Tighten the blade shaft nut. • Make sure blade is running at proper speed and that drive pin is functioning properly. • Use a softer bond/matrix to eliminate stress.
LOSS OF TENSION 	• Core overheating. • Core overheating as a result of blade spinning on arbor. • Core overheating from rubbing the material being cut. • Unequal pressure at blade clamping collars/flanges. • Blade is too hard for the material being cut.	• Make certain blade RPM is correct. • Check water flow, distribution and lines. • Tighten the blade shaft nut. Make certain the drive pin is functioning. • Properly align the saw to square cut. • Collars/flanges must be identical in diameter and the recommended size. • Use a softer bond/matrix to reduce stress.

III MAINTAINENACE - TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
BLADE WOBBLES	• Blade is on a damaged or worn saw. • Worn collar. • Blade runs at an incorrect speed. • Collar/flange diameters are not identical. • Blade is bent as a result of dropping or twisting.	• Check for bad bearings, bent shaft, or worn mounting arbor. • Check collars/flanges to make sure they are clean , flat and of correct diameter. • Set engine at proper RPM. • Use proper size blade collars/flanges. • DO NOT use bent blade. Contact blade manufacturer.
BLADE WILL NOT CUT	• Blade is too hard for material being cut. • Blade has become dull. • Blade does not cut material it was specified for.	• Select proper blade for material being cut. • Sharpen by cutting on softer abrasive material to expose diamonds. If continually sharpening, the blade is too hard for the material being cut. • Break-in on the material to be cut. If it does not dress itself, sharpen as you would a dull blade.
UNDERCUTTING THE CORE	• Abrasive wearing of the core faster than the segments.	• Use water to flush out fines generated during cutting • Use wear-restardant cores.
ARBOR HOLE OUT-OF-ROUND	• Collars/flanges are not properly tightened, permitting blade to rotate or vibrate on the shaft. • Collars/flanges are worn or dirty. Blade is not properly mounted.	• Make certain the blade is mounted on the proper shaft diameter. Tighten the shaft nut with a wrench to make certain that the blade is secure. • Clean collars/flanges, make sure they are not worn. Tighten arbor nut. • Make sure the pin hole slides over drive pin.
BLADE WORN OUT OF ROUND	• Shaft bearings are worn. • Surges occur because engine is not properly tuned. • Blade arbor hole is damaged from incorrectly mounting the blade. • Bond/matrix is too hard for • material. Blade si slipping, wearing one half of blade more than other.	• Install new blade shaft bearings or blade shaft, as required. • Tune engine according to manufacturer's manual. • If core is worn or arbor hole damaged, DO NOT USE. Contact blade manufacturer. • Replace worn shaft or mounting arbor bushing. • Make certain that drive pin is functioning. • Tighten spindle nut.

Ⅳ LUBRICATION AND SERVICE

- Check oil levels, wiring, hoses (air, fuel, water) and lubricate machine daily.
- Repair or replace all worn or damaged components immediately.
- Check drive belt tension, do not over-tension.
- Make sure machine has full set of matched belts.
- Check bladeshaft, make sure arbor and threads are not worn, damaged, or bent.
- Bladeshaft bearings should be tight, no free play side-to-side or up and down.
- Grease blade shaft bearings daily.
- Blade collars should be clean, free of nicks and burrs. No diameter wear and not out of round.
- Drive pin not excessively worn or bent and free of gouges.
- All guards in place and secure.
- All fasteners tight and secure.
- Air filter/oil filter (hydraulic or engine) clean.
- Flush clean water through the pump and spray the assembly every night. This prolongs the pump and blade life.

Lubricants:
Engine Oil SAE 10W/30
General Grease #1 Lithium

- Clean machine before starting lubrication maintenance.
- Insure machine is on solid, level ground before starting maintenance.
- During lubrication maintenance insure strict cleanliness is observed at all times.
- To avoid the risk of accidents, use the correct tool for the job and keep tools clean.
- The draining of engine oil is best carried out when the oil is warm NOT hot.
- Any spilled oil must be cleaned up immediately.
- Use only clean containers for oil and only CLEAN, FRESH oils and grease of correct grade.
- Contaminated Water/Fluids/Oils/Filters Must Be Disposed of Safely.

Ⅴ SEPECIFICATION

Motor

WQ908-1	**Diesel,Kama 186**	**7.5kw output**
WQ908-2	**Petrol,Honda GX390**	**9.8kw output**

Operation Mass:

WQ908-1 216kgs

WQ908-2 195kgs

Max. Cutting Depth --------170mm (6.7 in)

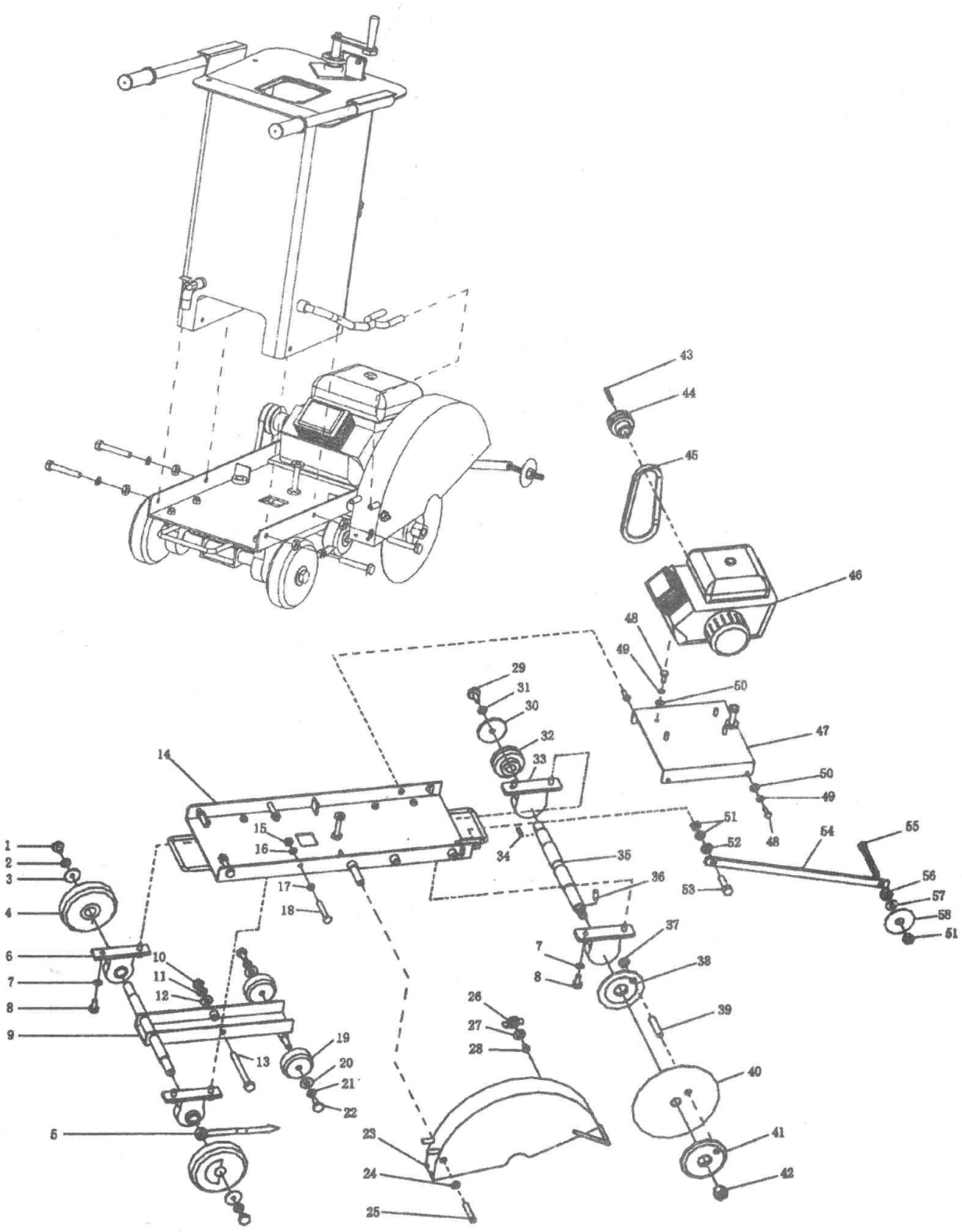
Blade size ----------350-500 mm (14-20 in)

Depth Adjustment --------- **Handle Rotation**

Driving ---------- Semi-self Propelled

Water Tank Capacity ---------- 40 L

Ⅵ REPLACEMENT PARTS LIST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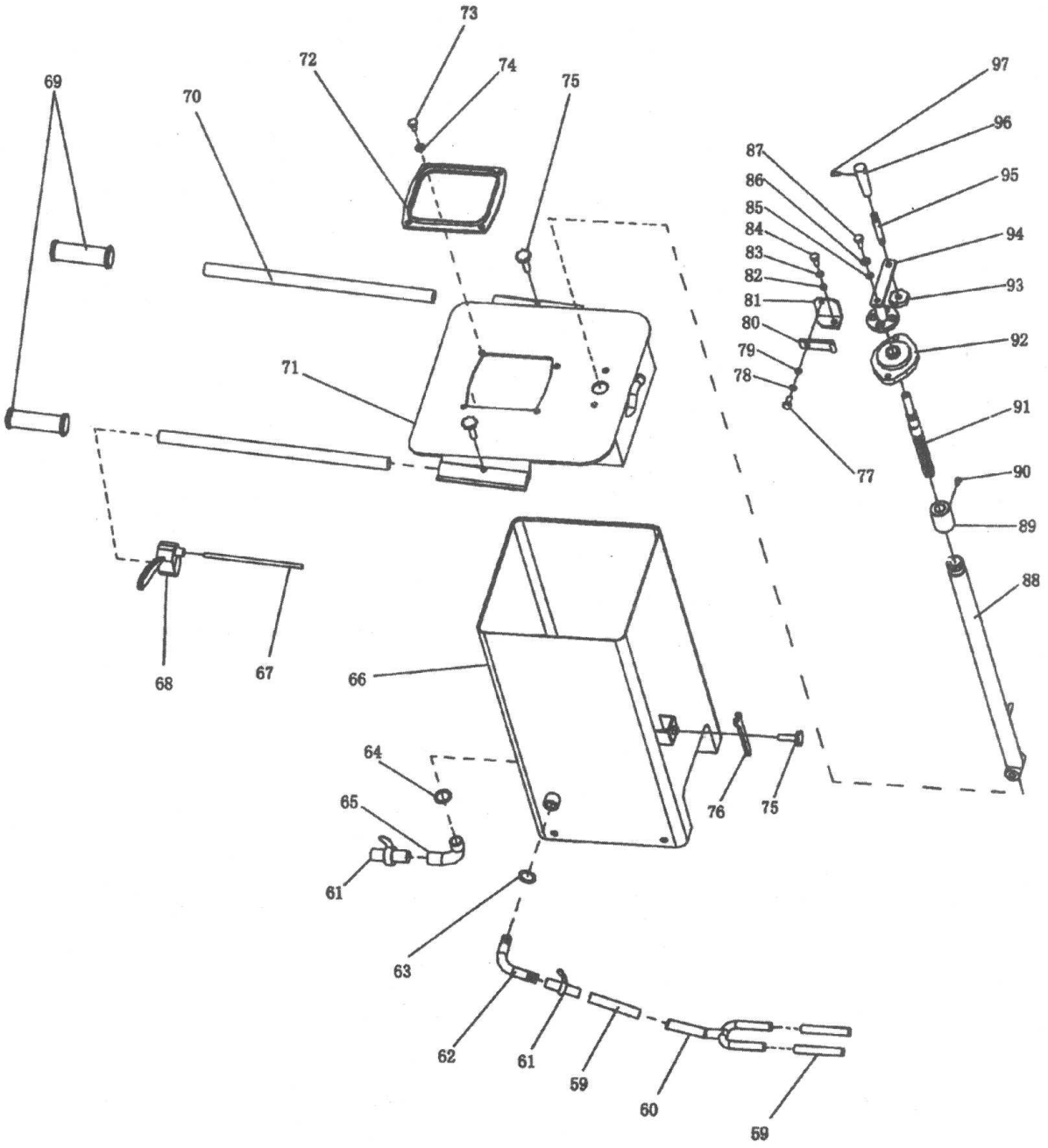
PARTS LIST 1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PARTS LIST 2

Pos.	Código / Code	Descripción	Description	Cantidad / Qty
1	908001	Tornillo M12x20	Bolt M12x20	2
2	908002	Arandela muelle M12x20	Spring washer 12	2
3	908003	Arandela profunda	Deep washer	2
4	908004	Goma rueda trasera	Rubber wheel (rear)	2
5	908005	Indicador	Indicator	1
6	908006	Cojinete y soporte	Bearing & bracket	2
7	908007	Arandela muelle 12	Spring washer 12	8
8	908008	Tornillo M12	Bolt M12	8
9	908009	Soporte ruedas	Wheel rack module	1
10	908010	Tuerca 12	Nut 12	1
11	908011	Arandela muelle 12	Spring washer 12	1
12	908012	Arandela 12	Washer 12	1
13	908013	Tornillo M12x120	Bolt M12x120	1
14	908014	Placa base	Base assy	1
15	908015	Tuerca M12	Nut M12	4
16	908016	Arandela muelle 12	Spring washer 12	4
17	908017	Arandela	Washer 12	4
18	908018	Tornillo M12	Bolt M12	4
19	908019	Goma rueda frontal	Rubber wheel (front)	2
20	908020	Arandel profunda	Deep washer	2
21	908021	Arandela muelle 8	Spring washer 8	2
22	908022	Tornillo M8x22	Bolt M8x22	2
23	908023	Disco protección	Blade guard	1
24	908024	Arandela 10	Washer 10	1
25	908025	Tornillo M10	Bolt M10	1
26	908026	Tuerca M10	Nut M10	1
27	908027	Arandela 10	Washer 10	1
28	908028	Tornillo	Screw	1
29	908029	Tornillo M10x25	Bolt M10x25	1
30	908030	Arandela	Washer	1
31	908031	Arandela muelle 10	Spring washer 10	1
32	908032	Polea	Pulley	1
33	908033	Cojinete y soporte	Bearing & bracket	2
34	908034	Llave 8x38	Key 8x38	1
35	908035	Eje principal	Principal axis	1
36	908036	Pasador C6	Pin C6	1
37	908037	Tuerca	Nut M8	1
38	908038	Disco brida interno	Blade flang (inner)	1
39	908039	Pasador	Pin	1
40	908040	Disco	Blade	1
41	908041	Disco brida externo	Blade flang (out)	1
42	908042	Tuerca	Nut	1
43	908043	Llave	Key	1
44	908044-1	Polea motor diesel	Engine pulley for diesel	1
	908044-2	Polea motor Honda	Engine pulley for Honda	1
	908044-3	Polea motor Robin	Engine pulley for Robin	1
45	908045-1	Correa SPA-GB11544 Diesel	V-belt SPA-GB11544 diesel	1
	908045-2	Correa SPA-GB11544 Gasolin	V-belt SPA-GB11544 petrol	1
46	908046-1	Motor diesel	Diesel engine	1
	908046-2	Motor Honda	Honda engine	1
	908046-3	Motor Robin	Robin engine	1

Pos.	Código / Code	Descripción	Description	Cantidad / Qty
47	908047	Placa base motor	Base assy. for engine	1
48	908048	Tornillo M10x30	Bolt M10x30	8
49	908049	Arandela muelle 10	Spring washer 10	8
50	908050	Arandela 10	Washer 10	8
51	908051	Tuerca M12	Nut M12	3
52	908052	Arandela 12	Washer 12	1
53	908053	Tornillo M12x45	Bolt M12x45	1
54	908054	Puntero	Pointer	1
55	908055	Tornillo M12x110	Bolt M12x110	1
56	908056	Tuerca	Nut	1
57	908057	Arandela 12	Washer 12	1
58	908058	Rueda puntero	Pointer wheel	1
59	908059	Tuberia de plastico	Plastic pipe	3
60	908060	Tuberia en “T”	Tee pipe	1
61	908061	Válvula grifo	Cock	2
62	908062	Codo	Elbow bend	1
63	908063	Tuerca	Nut	1
64	908064	Tuerca	Nut	1
65	908065	Codo	Elbow	1
66	908066	Depósito de agua	Water tank	1
67	908067	Cable accelerador	Throttle cable	1
68	908068	Maneta accelerador	Throttle control	1
69	908069	Empuñadura manillar	Handle bar grip	2
70	908070	Palanca	Handle lever	2
71	908071	Cubierta depósito	Tank cover	1
72	908072	Boca de inyección	Injection mouth	1
73	908073	Tornillo M10	Bolt M10	4
74	908074	Tornillo M10	Bolt M10	4
75	908075	Fijación	Knob	3
76	908076	Llave inglesa	Wrench	1
77	908077	Tornillo M8x30	Bolt M8x30	1
78	908078	Arandela muelle 8	Spring washer 8	1
79	908079	Arandela 8	Washer 8	1
80	908080	Soporte	Board plug	1
81	908081	Soporte orientción	Orientation board	1
82	908082	Arandela 10	Washer 10	2
83	908083	Arandela muelle 8	Spring washer 8	2
84	908084	Tornillo M10	Bolt M10	2
85	908085	Arandela 8	Washer 8	1
86	908086	Arandela muelle 8	Spring washer 8	1
87	908087	Tornillo M8x20	Bolt M8x20	1
88	908088	Palanca elevación	Manual raise/lower assy.	1
89	908089	Tuerca	Nut	1
90	908090	Tornillo M6x10	Bolt M6x10	1
91	908091	Tornillo	Screw	1
92	908092	Cojinete y soporte	Bearing & Bracket	1
93	908093	Tuerca M10	Nut M10	1
94	908094	Soporte	Bracket	1
95	908095	Palanca	Handle lever	1
96	908096	Mango	Handle grip	1
97	908097	Tornillo M6	Bolt M6	1

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